

RINGKASAN**PENGUKURAN KAPASITAS AEROB MAKSIMAL (KAM)
DENGAN TES JALAN – LARI 1500 METER DENGAN KENDALI
DENYUT JANTUNG 70 – 80% KEMAMPUAN MAKSIMAL DAN TES
SEPEDA ERGO (*BIKERACE TECHNOGYM*)****Edy Mintarto**

Kapasitas Aerob Maksimal (KAM) salah satu faktor untuk menggambarkan tingkat kebugaran jasmani seseorang. Pengukuran Kapasitas Aerob Maksimal (KAM) dapat dilakukan dengan dua cara yaitu secara langsung dan tidak langsung, secara langsung sulit untuk dilakukan dan membutuhkan tenaga serta biaya yang mahal disamping membahayakan bagi pelakunya. Pengukuran tidak langsung dapat dilakukan dengan alat dan tanpa menggunakan alat, pengukuran tanpa menggunakan alat atau tes lapangan adalah dengan jalan atau berlari sedangkan yang menggunakan alat atau tes laboratorium diantaranya tes *Runrace (Treadmill)*, *Rowrace* dan tes Sepeda Ergo (*Bikerace Technogym*).

Penelitian ini bertujuan untuk mengetahui perbedaan Kapasitas Aerob Maksimal (KAM) antara tes lapangan jalan - lari 1500 meter dengan kendali denyut jantung 70-80% kemampuan maksimal dengan tes Sepeda Ergo (*Bikerace Technogym*), orang coba terdiri dari 36 orang dibagi menjadi 2 kelompok dan masing-masing kelompok 18 orang. Kelompok 1 diberikan tes dan pengukuran Sepeda Ergo (*Bikerace Technogym*) dan tes jalan - lari 1500 meter dan kelompok 2 diberikan tes dan pengukuran jalan - lari 1500 meter dan tes Sepeda Ergo (*Bikerace Technogym*). Rancangan penelitian yang digunakan adalah "*The Randomized Factorial Cross Over Design*" dengan pelaksanaan tes masing-masing kelompok istirahat 7 hari untuk membuktikan hasil pengukuran Kapasitas Aerob Maksimal yang diperoleh tidak dipengaruhi oleh tes yang pertama (perlakuan pertama).

Hasil analisis data memberikan hasil kelompok 1, Sepeda Ergo (*Bikerace Technogym*) diperoleh hasil rerata KAM $36,2222 \pm 3,2277$ ml/Kg BB/Min dan tes jalan - lari 1500 meter diperoleh hasil rerata KAM $35,5722 \pm 2,9323$ ml/Kg/BB/Min.

Sedangkan berdasarkan hasil uji-t berpasangan (*Paired t-test*) KAM Tes Sepeda Ergo (*Bikerace Technogym*) dan Tes Jalan - Lari 1500 meter kelompok I adalah ($p = 0,119$) menunjukkan bahwa tidak terjadi perbedaan atau peningkatan yang bermakna pada KAM. Untuk kelompok 2, diperoleh hasil rerata KAM tes jalan - lari 1500 meter adalah $33,8000 \text{ ml/Kg/BB/Min} \pm 4,4095 \text{ ml/Kg/BB/Min}$ dan tes Sepeda Ergo (*Bikerace Technogym*) diperoleh hasil rerata KAM $33,7778 \text{ ml/Kg/BB/Min} \pm 5,2081 \text{ ml/Kg/BB/Min}$, sedangkan berdasarkan hasil uji-t berpasangan (*Paired t-test*) KAM Tes Jalan - Lari 1500 meter dan Tes Sepeda Ergo (*Bikerace Technogym*) kelompok II adalah ($p = 0,942$) menunjukkan bahwa tidak terjadi perbedaan atau peningkatan yang bermakna pada KAM.

Sedangkan hasil perhitungan korelasi berganda diperoleh nilai 0,94461 yang menunjukkan adanya hubungan yang kuat antara variabel KAM Tes Sepeda Ergo (*Bikerace Technogym*) dan variabel KAM Tes jalan - lari 1500 meter. Dan Koefisien determinasi berganda diperoleh nilai 0,89229, berarti 89,229 % perubahan variabel KAM Tes jalan - lari 1500 meter disebabkan oleh variabel KAM Tes Sepeda Ergo (*Bikerace Technogym*), sedangkan sisanya yaitu 10,771 disebabkan oleh variabel lain yang tidak diteliti.

Dengan demikian hasil tes jalan - lari 1500 meter dapat memprediksi Kapasitas Aerob Maksimal (KAM) dari tes sepeda Ergo (*Bikerace Tehnogym*).

SUMMARY

MAXIMUM AEROBIC CAPACITY (MAC) MEASUREMENT BETWEEN 1500 M WALKING-RUNNING TEST WITH HEARBEAT CONTROLLING OF 70-80% MAXIMUM AND ERGO CYCLE (BIKERACE TECHNOGYM) TEST

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Maximum aerobic capacity (MAC) is one factor to describe physical fitness of an individual. The measurement of maximum aerobic capacity (MAC) can be carried out in two ways, directly and indirectly. Direct measurement is difficult to do by common people, as it requires high cost and energy, in addition to its potential danger. Indirect measurement can be carried out with or without instruments. The latter is called a field test, in which subject runs and walks, while the test using instrument is carried out by means of Runrace (treadmill), rowrace, and Ergo Cycle (Bikerace Technogym).

The objective of this study was to identify the difference between maximum aerobic capacity (MAC) between 1500 m walking - running field test with heartbeat controlling 70-80% maximum capacity and Ergo Cycle (Bikerace Technogym) test. Samples comprised 36 individuals, divided into 2 groups, each consisting of 18 individuals. Group 1 received Ergo Cycle (Bikerace Technogym) test and measurement as well as 1500 m walking and running test. Group 2 received 1500 m walking and running test and measurement and Ergo Cycle (Bikerace Technogym) tests. This study used randomized factorial crossover design. Each group had a rest for 7 days to prove that the results of obtained Maximum Aerobic Capacity measurement was not affected by the first test (first treatment).

Results analisis that Group 1 Ergo Cycle (Bikerace Technogym) scoring revealed means MAC $36,2222 \pm 3,2277$ ml/Kg BB/Min and measurement as well as 1500 m walking and running test scoring revealed MAC means $35,5722 \pm 2,9323$ ml/Kg/BB/Min

Data analysis showed that Group 1 receiving Ergo Cycle (Bikerace Technogym) as well as 1500 m walking and running test had no significant difference or increase in MAC ($p = 0.119$). Group 2 receiving Ergo Cycle (Bikerace Technogym) as well as 1500 m walking and running test also had no significant difference or increase in MAC ($p = 0.942$). Whereas the result of double corelation scoring revealed 0,94461 indicated that there is capable correlation between MAC Ergo Cycle (Bikerace Technogym) variable and MAC Walk Test – Run 1500 m, and double deterination coeficient revealed 0,89229, so that 89,229% alternation of MAC walk test – run 1500 m variable was caused of MAC Ergo Cycle (Bikerace Technogym) test, whereas the test 10,771% was caused of the other variable that wasn't examined. Therefore, the results of MAC in Group 1 and 2 had no significant effect on MAC.

ABSTRACT

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Keywords: maximum aerobic capacity (MAC)